THE FETUS

- 3 periods are distinguished in pre-natal development.

Ovular period or germinal period	Embryonic period	Fetal period.
• Lasts for 1st 2 weeks following	- Begins at 3rd week following ovulation & extends upto 10 weeks	- Begins after 8th week following conception & ends in delivery.

- Length of fetus :- measurements taken from vertex to the coccyx.
  • The length expressed in centimeters.

- Age of fetus :- Gestational age is the duration of pregnancy calculated from the first day of last menstrual period (LMP).

→ Fetal Development :

Day 14-21 post conception :- Notochord develops
- Ectoderm thickens to form neural plate

Day 21-28 post conception :- forms neural tube, chambers of heart
- Ist heart beat on D-21

Week 4-6. :- optic vesicles appear, ~~human~~ face form

Week 6-8 :- all major structure form, human form.

week 8-12 : External genitalia develop

week 20 : skin is covered with lanugo
Vernix caseosa present

week 23 : Testes descend to internal inguinal ring

week 36 : One testicle descends into scrotum
Lanugo tends to disappear

week 40 : Both testicles descend into scrotum
Nails projects beyond finger tips.
posterior fontanelle closed.

→ Fetal Circulation :

- umbilical veins carrying oxygenated blood (80% saturated) from placenta ↓

enters the fetus at umbilicus & runs along the free margin of liver ↓

In liver, it gives off branches left lobe of liver & receives the deoxygenated blood from portal vein. ↓

Oxygenated blood mixed with portal venous blood, short circuits the liver through the ductus venosus to enter inferior vena cava & to right atrium of heart ↓

In right atrium, most oxygenated (75%) ductus venous blood is directed into foramen ovale by valve of inferior vena cava & passes to left atrium ↓

↓

Here, mixed with small amount of venous blood returning from lungs through the pulmonary veins.

↓

This left atrial blood is passed on through the mitral opening into left ventricle.

↓

Remaining 25% blood, after reaching right atrium via superior & inferior vena cava passes through tricuspid opening into right ventricle.

- The deoxygenated blood leaves the body by 2 ways of 2 umbilical arteries to reach placenta

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→ Changes of Fetal Circulation at Birth:

1.) closure of umbilical arteries

2) closure of umbilical veins.

3) closure of ductus arteriosus

4) closure of foramen ovale